UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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THIS WAS SUBMITTED

Ref: 8EPR-N

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Al Pierson, Director
Bureau of Land Management
Wyoming State Office
5353 Yellowstone, PO Box 1828
Cheyenne, WY 82003

RE: EPA's Review of the Draft Environmental Impact Statement (Draft EIS) and Draft Planning Amendment for the Powder River Basin Oil and Gas Project [CEQ #020017]

Dear Mr. Pierson:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed the Draft Environmental Impact Statement and Draft Planning Amendment for the Powder River Basin Oil and Gas Project. EPA's review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR Sections 1500-1508, and Section 309 of the Clean Air Act. BLM proposes to amend the Buffalo and the Platte River Resource Management Plans to allow coal bed methane development in the Wyoming portion of the Powder River Basin.

EPA is concurrently providing comments on a Draft EIS addressing coal bed methane development in the Montana portion of the Powder River Basin. (Please see the enclosed letter to Mat Millenbach, Montana BLM State Director.)

Management of produced water from coal bed methane development creates an interstate water quality issue that EPA believes needs to be reconciled. We also believe that this complex situation can be resolved by effective dialogue between the Bureau of Land Management (BLM) offices in both states, the State of Wyoming, and the downstream State of Montana. The downstream Crow and Northern Cheyenne Tribes must also be included in discussions. I personally offer my assistance to you, the States and the Tribes in moving to a clear resolution that will protect the streams in the Powder River Basin for all designated uses. EPA's intent is to collaborate with all interested parties to achieve a water management plan that will allow coal bed methane development to occur.

In the Powder River Basin, 65% of the mineral ownership is Federal. The Draft EIS predicts that coal bed methane production will proceed on 8 million acres of federal, state and private lands in Wyoming (page 1-1), with 51,367 projected coal bed methane wells (including 12,000 existing or permitted coal bed methane wells) and 3,200 conventional oil and gas wells. The Draft EIS projects that these wells will disturb 278,633 acres of vegetation (page 4-113) and result in 17,000 miles of new roads, 20,000 miles of new pipeline, and 5,311 miles of additional overhead electric power lines (Table S-2, page xxiii). This

EXHIBIT

project will also create facilities to provide an additional 491,700 horsepower for gas compression (Table S-2, page xxiii.)

To extract methane from underground coal formations, large quantities of groundwater need to be brought to the surface. Although the produced water is usually suitable for humans and livestock to drink, it is not suitable for irrigation. Irrigation use accounts for 98 percent of the surface water withdrawals within the Wyoming side of the Powder River Basin. Due to its levels of sodium (which is often described in terms of a sodium adsorption ratio or SAR) and salinity, coal bed methane-produced water can, if allowed to contact surface soil, permanently destroy the soil's ability to percolate water in a manner that can support plant growth. Specifically, according to work performed by the University of California at Davis, when the relationship of SAR to salinity reaches that in most of the produced water, soils become irreversible dispersed. (See Hansen, et al.. "Agricultural Salinity and Drainage," University of California Irrigation Program, Revised 1999.) According to work performed for the United Nations Agricultural Program, at salinity levels common in the produced waters, crop production will be lowered. (See Ayers, et al., "Water Quality for Agriculture," FAO Irrigation and Drainage Paper 29, Food and Agriculture Organization of the United Nations, 1985.)

Alternative 1, the Preferred Alternative, proposes discharging produced water without treatment to surface streams and rivers. The Draft EIS estimates that the projected 51,367 coal bed methane wells will bring 4.4 million acre feet (192 billion cubic feet) of groundwater to the surface (page 4-72). A maximum yearly discharge of 222,000 acre-feet is projected for the year 2006. The Draft EIS further predicts that there will be 4,800 coal bed methane related surface discharge locations in the Wyoming portion of the Powder River Basin. If the produced water is allowed to flow to surface streams and rivers, as it would be under the Preferred Alternative, it would make the Tongue River and the Belle Fourche River unsuitable for irrigation (page 4-64). The SAR and salinity values predicted to occur in the Tongue River under the Preferred Alternative are inconsistent with the existing agricultural practices in the basin. These values are also inconsistent with our interpretation of the State of Wyoming's requirement that water quality degradation "shall not be of such an extent to cause a measurable decrease in crop or livestock production" and the requirement that downstream state standards be met.

EPA has rated this Draft EIS as **EU-3 – Environmentally Unsatisfactory-Inadequate Information.** (See enclosed "Summary of Rating Definitions.") EPA considers the projected water quality impacts to irrigated agriculture resulting from the Preferred Alternative to be environmentally unacceptable. Specifically for the Tongue River, the predicted level of SAR would fail to meet EPA's interpretation of Wyoming's and Montana's requirements to maintain these streams for agricultural uses.

EPA considers the Wyoming Draft EIS to be inadequate because it did not include an alternative that would meet water quality standards for irrigated agriculture. In addition, the absence of integration between the Montana and Wyoming Draft EISs results in numerous discrepancies. These discrepancies are discussed in the enclosed Detailed Comments. The Draft EIS needs to reconcile problems with different methods of analysis and assumptions or input factors where both Draft EISs evaluate the same resources or impacts. Many of these discrepancies could be addressed by preparing a single Reasonable Foreseeable Development Scenario that addresses development for the entire Powder River Basin.

Furthermore, the Draft EIS does not include information about thirteen air quality violations of the health based standard in 2001 for PM_{10} in the Powder River Basin. Impacts from the addition of 17,000 miles of mostly gravel roads or dirt "two track" roads for coal bed methane development could further

exacerbate particulate air pollution in th Powder River Basin. These events and mitigation measures should be included and analyzed in the Draft EIS.

BLM should (1) harmonize the two current analyses of the impacts on this basin; (2) present alternatives that industry can implement and that are sufficient to protect all affected water bodies; and (3) provide an adequate opportunity for the public to review and comment on the complex issues at stake. Without resolution of the inadequacies in the current draft EIS, the proposed amendment of these Resource Management Plans could become a candidate for referral to the President's Council on Environmental Quality.

We appreciate the opportunity to review this Draft EIS and are available to discuss our comments in further detail. I can be reached at (303) 312-6308 or call Max H. Dobson, Assistant Regional Administrator for Ecosystem Protection and Rededication at (303) 312-6598, or have your staff call Gregory Oberley, our lead NEPA reviewer for this project, at (303) 312-7043.

Sincerely,

Jack W. McGraw
Acting Regional Administrator

Enclosures:
EPA's Summary of Rating Definitions, 1 page
EPA's Detailed Comments on the Draft EIS, 34 pages
EPA's Comment Letter to Mat Millenbach, Montana BLM, 4 pages

cc: Mat Millenbach, BLM State Director , Montana State Office
Dennis Hemmer, Wyoming DEQ, Cheyenne, Wyoming
Jan Sensibaugh, Montana DEQ, Helena, Montana
David Ballard, Montana Oil and Gas Commission, Billings, Montana
Geri Small, Northern Cheyenne Tribe, Lame Deer, Montana
Clifford Bird-in-Ground, Crow Tribe, Crow Agency, Montana
Keith Beartusk, Bureau of Indian Affairs, Billings, Montana

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May 15, 2002

Ref: 8EPR-N

Al Pierson, State Director
Bureau of Land Management, Wyoming State Office
5353 Yellowstone, PO Box 1828
Cheyenne, WY 82003

RE: EPA's Review of the Draft Environmental Impact Statement (Draft EIS) and Draft Planning Amendment for the Powder River Basin Oil and Gas Project [CEQ #020017]

Dear Mr. Pierson:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed the Draft Environmental Impact Statement and Draft Planning Amendment for the Powder River Basin Oil and Gas Project. EPA's review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR Sections 1500-1508, and Section 309 of the Clean Air Act. BLM proposes to amend the Buffalo and the Platte River Resource Management Plans to allow coal bed methane development in the Wyoming portion of the Powder River Basin.

EPA is concurrently providing comments on a Draft EIS addressing coal bed methane development in the Montana portion of the Powder River Basin. Please see a copy of the enclosed letter to Sherry Barnett, Montana BLM Acting State Director.

Management of produced water from coal bed methane development creates an inter-jurisdictional water quality question that EPA believes needs to be addressed. We believe that this complex situation should be resolved by effective dialogue between the Bureau of Land Management (BLM) offices in both states, the State of Wyoming, and the downstream State of Montana. The downstream Crow and Northern Cheyenne Tribes should also be included in these discussions.

Our agencies made progress in that direction during our April 30, 2002, meeting in Sheridan, Wyoming, in which Dennis Hemmer and Jan Sensibaugh, Directors of the Departments of Environmental Quality for Wyoming and Montana, respectively, committed their States to assuring that the discharges of CBM-produced water would be protective of these streams present beneficial uses, such as agricultural irrigation. I personally offer my assistance to you, the States, and the Tribes in moving to a clear resolution that will protect all affected streams for all designated uses. The EPA's intent is to collaborate with all interested parties to achieve a watershed management framework that will allow development to occur in an environmentally sound manner.

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Background Information: In the Powder River Basin, 65% of the mineral ownership is Federal. The Draft EIS predicts that coal bed methane production will proceed on 8 million acres of federal, state and private lands in Wyoming, with 51,400 projected coal bed methane wells (including 12,000 existing or permitted coal bed methane wells) and 3,200 conventional oil and gas wells. The Draft EIS projects that these wells will disturb 278,000 acres of vegetation and result in 17,000 miles of new roads, 20,000 miles of new pipeline, and 5,300 miles of additional overhead electric power lines. This project will also create facilities to provide an additional 500,000 horsepower for gas compression.

To extract methane from underground coal formations, large quantities of groundwater need to be brought to the surface. Although the produced water may be suitable for humans and livestock to drink, it is typically not suitable for irrigation. Irrigation use accounts for 98 percent of the surface water withdrawals on the Wyoming side of the Powder River Basin. Due to its levels of sodium (which is often described in terms of a sodium adsorption ratio or SAR) and salinity, coal bed methane-produced water can, if allowed to contact surface soil, permanently destroy the soil's ability to percolate water in a manner that can support plant growth.

Alternative 1, the Preferred Alternative, proposes discharging produced water without treatment to surface streams and rivers. The Draft EIS estimates that the projected 51,367 coal bed methane wells will bring 4.4 million acre feet (192 billion cubic feet) of groundwater to the surface. A maximum yearly discharge of 381,000 acre-feet is projected for the year 2006. The Draft EIS further predicts that there will be 4,800 coal bed methane-related surface discharge locations in the Wyoming portion of the Powder River Basin.

BLM's assessment in the Draft EIS determined that if produced water is allowed to flow to surface streams and rivers, as it would be under the Preferred Alternative, it would make the Tongue River and the Belle Fourche River unsuitable for irrigation (Table S-2 on Page xxv and Page 4-64.) The SAR and salinity values predicted to occur in the Tongue River under the Preferred Alternative are inconsistent with the existing agricultural practices in the basin. These values are also inconsistent with our interpretation of the State of Wyoming's regulations, which specify that water quality degradation "shall not be of such an extent to cause a measurable decrease in crop or livestock production" and the requirement that downstream state standards be met.

EPA's rating of this Draft EIS: EPA, as part of its review process, provides a rating of the Preferred Alternative that summarizes EPA's concerns over the potential environmental impacts. We have rated the environmental impacts as Environmentally Unsatisfactory ("EU") because of impacts to irrigated agriculture. BLM's assessment of the preferred alternative states that if the full surface discharge of produced water were to be implemented, the Tongue and Belle Fourche Rivers would no longer support irrigation. Specifically, for the Tongue River, the analysis shows that the predicted levels of SAR would cause irreversible impacts to soils. Therefore, EPA is rating the Preferred Alternative as environmentally unsatisfactory. EPA recommends looking at alternatives that have fewer environmental impacts although they may have higher costs.

Our NEPA review process also calls for providing a rating regarding the adequacy of the information provided in the Draft EIS. In this case, we have significant concerns over the adequacy of the Draft EIS and have rated the document as "inadequate" ("3"). See the enclosed "Summary of Rating Definitions." A summary of our most significant concerns follows:

Range of alternatives: The Wyoming Draft EIS is considered to be inadequate because the range of alternatives did not include an alternative that would meet state water quality standards. Beyond the Preferred Alternative, Alternatives 2a and 2b, which emphasize infiltration and treatment, do not provide an analysis of impacts to water quality. In the absence of that analysis, the EIS does not demonstrate that water quality standards can be met by any alternative presented.

Impacts to the Tongue River may not meet Clean Water Act requirements. The analysis contained in the Draft EIS shows that the discharge of untreated water into the Tongue River can result in water quality unsuitable for irrigation. EPA also conducted an analysis of the impacts to the Tongue River. The EPA similarly found that if produced water is discharged without treatment, water quality in the Tongue River would result in significantly reduced crop production and irreparable soil dispersion in Montana. Applying what EPA considers to be critical flow and appropriate background water quality conditions, the predicted water quality for discharge without treatment would be inconsistent with support for the existing agricultural practices in the basin and inconsistent with both States' requirements to protect these streams for irrigation uses. The results of EPA's analysis show that only a small fraction of the produced water could be discharged without treatment before reaching the salinity and SAR cumulative effects threshold for adverse crop and soil effects. EPA urges BLM to comprehensively address the water quality issues for the Tongue River in the two Draft EISs and to prepare a predictive analysis for this river that is acceptable to the States and the Tribes.

Impacts to the Powder River and Little Powder River are not well understood. Regarding impacts associated with discharging untreated produced water, EPA's analysis suggests that the frequency of flows with salinity suitable for alfalfa irrigation may decrease. At the same time, there would likely be an increase in the volume of flow suitable for alfalfa irrigation due to mixing CBM-produced water discharge with river flow. It is not yet understood how such changes would affect irrigation practices. EPA urges BLM to comprehensively address the water quality issues for the Powder River and Little Powder River in the two Draft EISs and to prepare predictive analyses for these rivers that is acceptable to the States.

Impacts to Belle Fourche River and Cheyenne River. Regarding impacts associated with discharging untreated produced water, EPA's analysis of the Belle Fourche River suggests that there may be a concern with potential changes to the SAR values in relation to salinity. This could potentially affect irrigation in South Dakota. EPA urges BLM to comprehensively address the water quality issues for the Belle Fourche River and Cheyenne River in this Draft EIS and to prepare predictive analyses for these rivers that is acceptable to the States.

Combined Analyses for this Draft EIS and the Montana Draft EIS should be provided: The bifurcation of the Powder River Basin into two EISs does not enable the decision-maker and the public to fully evaluate the cumulative impact of both projects. In addition, the separation of the EIS's between the two states has resulted in conflicting information. For example, for future water quality conditions in the same streams at the same monitoring locations, the analyses in the two Draft EISs differ. Another difference exists between the Reasonably Foreseeable Development (RFD) scenario for each Draft EIS. The Wyoming RFD projects much less recoverable gas than does the RFD in the Montana EIS. These inconsistencies should be evaluated and harmonized for both draft EISs. The EISs should also refer to the USGS report issued in 2001 concerning the recoverable coal bed methane for the entire Powder River Basin.

Air quality analysis needs to be provided: The Draft EIS does not include sufficient information on existing air quality trends in the Powder River Basin. Air quality conditions have changed considerably in the Powder River Basin in Wyoming in the last several years. Beginning in 1999, particulates of a size of 10 microns or smaller have been recorded at or above the Class II PSD increment, culminating in 13 exceedances of the health based standard (NAAQS) in 2001 and 2002. Impacts from the addition of 6,680 miles of unpaved roads in the Montana portion of the Powder River Basin when combined with the 17,000 miles of mostly gravel roads or dirt "two track" roads in Wyoming could further exacerbate particulate air pollution in the Powder River Basin. These events and mitigation measures should be analyzed, in consultation with the Wyoming DEQ, and included in a revised or supplemental Draft EIS.

Steps Toward Quick Resolution of Issues: We suggest the following steps for the agencies to move toward resolution of the issues discussed above:

Incorporate the existing state agreements and the water quality thresholds being prepared by the Montana Department of Environmental Quality and the Northern Cheyenne Tribe. The Montana Board of Environmental Review will shortly be presented with recommendations from the Montana DEQ regarding numeric thresholds for protection of agriculture, and with scientific information that supports those recommendations. The Northern Cheyenne Tribe has recently proposed water quality criteria for the Tongue River, based on independent scientific analysis of water quality impacts to agriculture and riparian vegetation. BLM should incorporate into its analysis the thresholds that these agencies determine are protective of designated uses, and use those thresholds as the basis for determining cumulative loading limits needed to avoid degrading the Powder River Basin watersheds.

A Watershed Management Framework should be prepared. EPA offers its assistance in preparing a watershed management framework that utilizes the scientific basis described above, and consists of the following steps: 1) setting a cumulative allowable threshold of untreated produced water as a percentage of the total water expected from the number of wells that could be reasonable foreseen, 2) defining the mix of technically feasible and economically viable water management practices other than discharge without treatment, and 3) analyzing the cumulative environmental impacts of those water management practices. By working together, we believe we can assist BLM in developing an alternative that meets water quality standards and incorporates a watershed management framework.

Include additional key information in a Revised or Supplemental Draft EIS. The EPA believes the above watershed information, the additional air quality analysis, and the additional fish and wildlife assessment should be included in a revised or supplemental Draft EIS in order for the public to have an adequate opportunity to review and provide comments on it. BLM should (1) harmonize the two current analyses of the impacts on this basin; (2) present alternatives that industry can implement and that are sufficient to protect all affected water bodies; and (3) provide an adequate opportunity for the public to review and comment on these complex issues. Without resolution of the issues raised in this letter, the proposed amendment of these Resource Management Plans could become a candidate for referral to the President's Council on Environmental Quality.

We appreciate the opportunity to review this Draft EIS. If you would like to discuss our comments in further detail, please call me at (303) 312-6308 or Max H. Dodson, Assistant Regional Administrator for Ecosystems Protection and Remediation, at (303) 312-6598, or have your staff call Gregory Oberley, our lead NEPA reviewer for this project, at (303) 312-7043.

Sincerely,

original signed by:

/s/ Robert E. Roberts
Regional Administrator

Enclosures

cc: Sherry Barnett, BLM Acting State Director, Montana State Office
Dennis Hemmer, Wyoming DEQ, Cheyenne, Wyoming
Jan Sensibaugh, Montana DEQ, Helena, Montana
Steve Pimer, South Dakota Department of Natural Resources
David Ballard, Montana Oil and Gas Commission, Billings, Montana
Geri Small, Northern Cheyenne Tribe, Lame Deer, Montana
Clifford Bird-in-Ground, Crow Tribe, Crow Agency, Montana
Keith Beartusk, Bureau of Indian Affairs, Billings, Montana

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May 15, 2002

Ref: 8EPR-N

Sherry Barnett, Acting State Director
Bureau of Land Management, Montana State Office
P.O. Box 36800
Billings, Montana 59107-6800

Jan Sensibaugh, Director
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

David Ballard, Chairman
Montana Board of Oil and Gas Conservation
2535 Saint Johns Avenue
Billings, Montana 59012

RE: EPA's Review of the Statewide Draft Oil and Gas Environmental Impact Statement and Amendment of the Powder River and Billings Resource Management Plans, (CEQ #020060)

Dear Ms. Barnett, Ms. Sensibaugh, and Mr. Ballard:

The U.S. Environmental Protection Agency (EPA) offers comments on the Statewide Draft Oil and Gas Environmental Impact Statement (Draft EIS) and Amendment of the Powder River and Billings Resource Management Plans, Montana. This Draft EIS relates to the BLM's proposal to amend the Powder River and Billings Resource Management Plans to allow for coal bed methane (CBM) production and, to a lesser degree, conventional oil and gas development in the portion of the Powder River Basin in the State of Montana, as well as a comparable proposal from the State of Montana for State-administered lands.

As a cooperating agency in the development of this environmental impact statement, the EPA is providing its review and comments pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR Sections 1500-1508, and Section 309 of the Clean Air Act. The EPA is concurrently providing comments on a Draft EIS addressing coal bed methane development in the Wyoming portion of the Powder River Basin. Please see the enclosed copy of the letter to Al Pierson, the BLM's Wyoming State Director.

Management of produced water from coal bed methane development creates an inter-jurisdictional water quality question that the EPA believes needs to be addressed. We believe that this complex situation must be resolved by effective dialogue among the BLM, the States of Montana and Wyoming, and the Northern Cheyenne and Crow Tribes.

Our agencies made progress in that direction during our April 30, 2002, meeting in Sheridan, Wyoming, in which Dennis Hemmer and Ms. Sensibaugh, Directors of the Departments of Environmental Quality for Wyoming and Montana, respectively, committed their States to assuring that the discharges of CBM-produced water would be protective of these streams' present beneficial uses, such as agricultural irrigation. I personally offer my assistance to the BLM, the States, and the Tribes in moving to a clear resolution that will protect all affected streams for all designated uses. The EPA's intent is to collaborate with all interested parties to help develop a watershed management framework that will allow coal bed methane development to occur in an environmentally sound manner.

Background information. The contemplated coal bed methane development would include drilling wells in a portion of the Powder River Basin for which the BLM already has approved coal leases. The oil and gas extraction industry predicts 9,551 coal bed methane wells in the Montana portion of the Powder River Basin by 2010. In this Draft EIS, the BLM estimates that over the next 20 years, up to 18,300 coal bed methane wells are reasonably foreseeable in the Montana portion of the Basin, of which approximately 47% involve federal minerals managed by the BLM. The BLM projects that this number of wells would disturb 35,100 acres of land, directly impact 67,500 acres of wildlife habitat, adversely affect 2,800 acres of riparian habitat, result in 6,680 miles of new roads, and necessitate 20,700 miles of new electric utility corridors. Cumulatively, there will be indirect adverse impacts to wildlife on 4.7 million acres.

To extract methane from underground coal formations, large quantities of ground water need to be brought to the surface. Although the produced water may be suitable for humans and livestock to drink, it is typically not suitable for irrigation. Due to its high levels of sodium (which is described in terms of sodium adsorption ratio or SAR) and salinity, coal bed methane-produced water can irreversibly destroy soil structure, leaving the soil unable to percolate water in a manner that can support plant growth. At certain salinity levels, crop production is diminished. This is particularly important in the Powder River Basin, where over 30,000 acres are irrigated.

To analyze reasonably foreseeable development, the BLM presents four alternatives, which differ by water management theme: Alternative B provides for water injection underground, Alternative C provides for discharge of untreated water, Alternative D provides for water treatment prior to discharge, and Alternative E, the Preferred Alternative, is intended to prevent stream degradation by emphasizing beneficial use and considering injection, treatment, and impoundment. Alternative A is the "No Action" Alternative.

EPA's rating of this Draft EIS. EPA, as part of reviewing environmental impact statements, rates their preferred alternatives according to EPA's concerns over their potential environmental impacts. However, because this Draft EIS does not present sufficient information to understand the impacts of the Preferred Alternative, we are not rating its environmental impacts. Our NEPA review process also calls for providing a rating regarding the adequacy of the information provided in the Draft EIS. In this case, we have significant concerns over the adequacy of the Draft EIS and have rated the document as "inadequate," to which we assign the number "3," according to the enclosed "Summary of Rating Definitions."

In the Preferred Alternative, Alternative E, the agencies identified the laudable goal of preventing degradation of watersheds. However, the Draft EIS does not present a full analysis of how the discharge of produced water without treatment would degrade these watersheds. Furthermore the Draft EIS does not specify how produced water will be managed to meet the goal of preventing degradation of the watersheds. Although the Draft EIS states generally that industry would treat the produced water or find beneficial uses

for it, there is no specific information on produced water management options or implementation that would assist the public in understanding how the produced water will be managed. Without this information, it is difficult to determine whether or how agricultural irrigation and riparian vegetation would be protected.

The basis for our rating is the lack of specifically identified, economically and technically feasible water management practices for each watershed that are adequate to assure attainment of water quality standards under the Clean Water Act. The Draft EIS recognizes the importance of choosing an alternative that is economically and technically feasible. In order to achieve these conditions under the Preferred Alternative, the Draft EIS must include the specific information on how water quality standards will be met. A summary of the most important significant concerns follows:

Impacts to the Tongue River and Rosebud Creek may not meet Clean Water Act requirements. The Draft EIS shows that discharge of untreated water into the Tongue River and Rosebud Creek would not be consistent with BLM's goal of avoiding degradation of the watershed. With respect to Alternative C, the only alternative where predicted water quality information is provided, the BLM states that if the produced ground water is allowed to flow untreated to surface streams and rivers it would render the Little Powder River, the Powder River, the Tongue River and Rosebud Creek unusable for irrigation based on the scientific relationship of salinity and SAR effects. EPA also conducted an analysis of the impacts to water quality. EPA's analysis indicates that if produced water is discharged without treatment, water quality in the Tongue River and Rosebud Creek would result in significantly reduced crop production and irreparable soil dispersion. Applying what EPA considers to be critical flow and appropriate background water quality conditions, the predicted water quality for discharge without treatment would be inconsistent with the existing agricultural practices in the basin and inconsistent with the State's requirement to protect these streams for irrigation uses. The results of EPA's analysis show that only a small fraction of the produced water could be discharged without treatment before reaching the salinity and SAR cumulative effects threshold for adverse crop and soil effects. EPA urges BLM to comprehensively address the water quality issues for the Tongue River in the two Draft EISs and to prepare a predictive analysis for this river that is acceptable to the States and the Tribes.

Impacts to the Powder River and Little Powder River are not well understood. The Montana EIS predicts that these rivers may become unsuitable for irrigation with the discharge of untreated produced water. In contrast, the Wyoming EIS predicts these streams may remain suitable for irrigation with discharge of untreated produced water. EPA's analysis indicates that on average the water quality in the Powder and Little Powder Rivers, which naturally are characterized by higher salinity, may remain suitable for irrigation when untreated produced water is discharged to the rivers. This is contrary to the finding in the Montana Draft EIS primarily because the produced water in the Powder and Little Powder Rivers drainages is not as saline as reported in the Draft EIS. EPA's analysis suggests that the frequency of flows with salinity suitable for alfalfa irrigation may decrease. At the same time, there would likely be an increase in the volume of flow suitable for alfalfa irrigation due to mixing CBM-produced water discharge with river flow. It is not yet understood how such changes would affect irrigation practices. EPA urges BLM to comprehensively address the water quality issues for the Powder River and Little Powder River in the two Draft EISs and to prepare predictive analyses for these rivers that are acceptable to the States.

Combined analyses for this Draft EIS and the Wyoming Draft EIS should be prepared. The bifurcation of the Powder River Basin into two EISs does not enable the decision-maker and the public to fully evaluate the cumulative impact of both projects. In addition, the separation of the EIS's between the

two states has resulted in conflicting information. For example, for future water quality conditions in the same streams at the same monitoring locations, the analyses in the two Draft EISs differ. Another difference exists between the Reasonably Foreseeable Development (RFD) scenario for each Draft EIS. The Wyoming RFD projects much less recoverable gas than does the RFD in the Montana EIS. These inconsistencies should be evaluated and harmonized for both draft EISs. The EISs should also refer to the USGS report issued in 2001 concerning the recoverable coal bed methane for the entire Powder River Basin.

Impacts to ground water, air quality, Tribal communities and their natural resources, and wildlife have not been fully analyzed. In their January 17, 2002, letter transmitting the Draft EIS to other agencies for review, the BLM and the State of Montana indicated that they had not yet analyzed:

1) the drawdown of the regional ground water system using a 3-D model;
2) potential human health and visibility changes due to degraded air quality;
3) impacts upon sites that the Crow and Northern Cheyenne Tribes consider sacred; and
4) the potential impacts upon the Crow and Northern Cheyenne tribal communities and their natural resources.

Air quality conditions have changed considerably in the Powder River Basin in Wyoming in the last several years. Beginning in 1999, particulates 10 microns or smaller have been recorded at or above the Class II PSD increment, culminating in 13 exceedances of the health-based standard (NAAQS) in 2001 and 2002. Impacts from the addition of 6,680 miles of unpaved roads in the Montana portion of the Powder River Basin, when combined with the 17,000 additional miles of mostly gravel roads or dirt two-track roads in Wyoming could further exacerbate particulate air pollution in the Powder River Basin. These events and mitigation measures should be included and analyzed in a revised or supplemental Draft EIS.

Additionally, the Draft EIS refers to a biological assessment discussing the impacts on threatened or endangered species, which should be made available.

Steps toward quick resolution of issues. We suggest completing an analyses of Tribal issues, ground water, air quality and wildlife, to meet the NEPA and Montana Environmental Policy Act (MEPA) obligations to determine significant impacts. We suggest the following next steps for the agencies:

Adopt the scientific analyses of water quality criteria being prepared by the Montana Department of Environmental Quality and the Northern Cheyenne Tribe. By using the analytical information prepared for the Montana Board of Environmental Review for water quality criteria and the similar work prepared by the Northern Cheyenne Tribe, BLM can promote and expedite a process with regard to Clean Water Act compliance. The State of Montana is currently in a process to adopt water quality standards in response to new water use practices identified with the coal bed methane industry. The Northern Cheyenne Tribe recently proposed water quality standards on the Tongue River. Montana has plans to complete a Clean Water Act process known as a Total Maximum Daily Load (TMDL) for the Tongue River, Rosebud Creek, Powder River and Little Powder River by early 2003. The State's TMDL effort will define the cumulative loading limits needed to avoid degrading the watersheds. BLM could adopt and support the scientific rationale being developed by the State and the Tribe to protect these watersheds for their beneficial uses and present that information in a revised or supplemental Draft EIS.

A Watershed Management Framework should be prepared. EPA offers its assistance in preparing a watershed management framework that utilizes the scientific basis described above and consists of the following steps: 1) setting a cumulative allowable threshold of untreated produced water as a percentage of the total water expected from the number of wells that could be reasonable foreseen, 2) defining the mix of technically feasible and economically viable water management practices other than discharge without treatment, and 3) analyzing the cumulative environmental impacts of those water management practices.

Include all additional key information in a Revised or Supplemental Draft EIS. The EPA believes the above watershed information, the biological assessment, as well as the four broad categories of information referenced in the lead agencies' transmittal letter should be included in a revised or supplemental Draft EIS in order for the public to have an adequate opportunity to review and provide comments on it. BLM should (1) harmonize the two current analyses of the impacts on this basin; (2) present alternatives that industry can implement and that are sufficient to protect all affected water bodies; and (3) provide an adequate opportunity for the public to review and comment on these complex issues. Without resolution of the inadequacies in the current draft EIS, the proposed amendment of these Resource Management Plans could become a candidate for referral to the President's Council on Environmental Quality.

We appreciate the opportunity to review this Draft EIS. We welcome working with you further as your agencies complete the NEPA process. If you have any questions, please call me at (303) 312-6308 or Max Dodson, Assistant Regional Administrator for Ecosystems Protection and Remediation, at (303) 312-6598, or, have your staff call Weston Wilson, our lead NEPA reviewer for this project, at (303) 312-6562.

Sincerely,

original signed by:

/s/ Robert E. Roberts
Regional Administrator

Enclosures

cc: Al Pierson, BLM, Cheyenne, Wyoming
Dennis Hemmer, Wyoming DEQ, Cheyenne, Wyoming
Geri Small, Northern Cheyenne Tribe, Lame Deer, Montana
Joseph Speakthunder, Ft. Belknap Agency, Montana
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